Jenness Beach State Park, Rye

BEACH WATER QUALITY REPORT
SUMMER 2004

February 2005

Prepared by: Alicia Carlson and Sara Sumner

Healthy Swimming Through Clean Water

NHDES

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

BACKGROUND

The New Hampshire Department of Environmental Services (NHDES) has operated its Public Beach Inspection Program, or Beach Program, for over twenty years. Coastal beach monitoring began in 1989 and has continued through the present. NHDES recognizes the threat to public health at public beaches and continues to monitor public beaches throughout the state for the presence of pathogenic organisms. Coastal beaches are monitored for the presence of the fecal bacteria Enterococci. These fecal bacteria are present in the intestines of warm-blooded animals including humans. Fecal bacteria, when present in high concentrations and ingested, can commonly cause gastrointestinal illnesses such as nausea, vomiting and diarrhea. They are also known as indicator organisms, meaning their presence in water may indicate the presence of other potentially pathogenic organisms.

In October of 2000, the United States Environmental Protection Agency (EPA) signed into law the Beaches Environmental Assessment and Coastal Health (BEACH) Act. The BEACH Act is an amendment to the Clean Water Act that authorizes the EPA to award grants to eligible states. The purpose of the BEACH Act is to reduce the risk of disease to users of the nation's recreational waters. BEACH Act grants provide support for development and implementation of monitoring and notification programs that help protect the public from exposure to pathogenic microorganisms in coastal recreation waters.

NHDES received grant funding in 2002 to develop and implement a beach monitoring and notification program consistent with EPA's performance criteria requirements published in the *National Beach Guidance and Required Performance Criteria for Grants* document (www.epa.gov/waterscience/beaches/grants). NHDES has successfully met all requirements and continues to expand the monitoring and notification program. In 2002, only 9 coastal beaches were monitored, in 2003 fifteen coastal beaches and in 2004 sixteen coastal beach were monitored on a routine basis.

Table of Contents

List of Figures

List of Tables

Beach Description

Jenness Beach State Park is owned and maintained by the New Hampshire Division of Parks and Recreation, State Parks Bureau.

Jenness Beach is a soft sand beach whose total length is 1,780 feet. Jenness beach is bordered to the north by Cable Beach and to the south by Sawyer Beach. The beach is frequently used by residents and vacationers for various recreational activities. There are two access points to the beach area from the parking lot off Route 1A. Lifeguards are present throughout the summer and sanitary facilities are available.

Waterfowl are frequently observed at the beach. The most commonly seen are terns and gulls, although generally they are few in number. Dogs were observed on a few occasions. Dogs are restricted from the beach per the New Hampshire State Parks Division.

Below is a brief description of the sampling stations at Jenness Beach State Park, Rye. The stations are pictured in Figure 1.

- For all stations, parking is available in the state beach parking lot for a fee (meters) or along Route 1A.
- The left sample station is located in front of the orange sign on the north end of the parking lot.
- The center sample station is located in front of the center access point to the beach.
- The right sample station is located in front of the first parking spot against the wall on the south end of the parking lot.

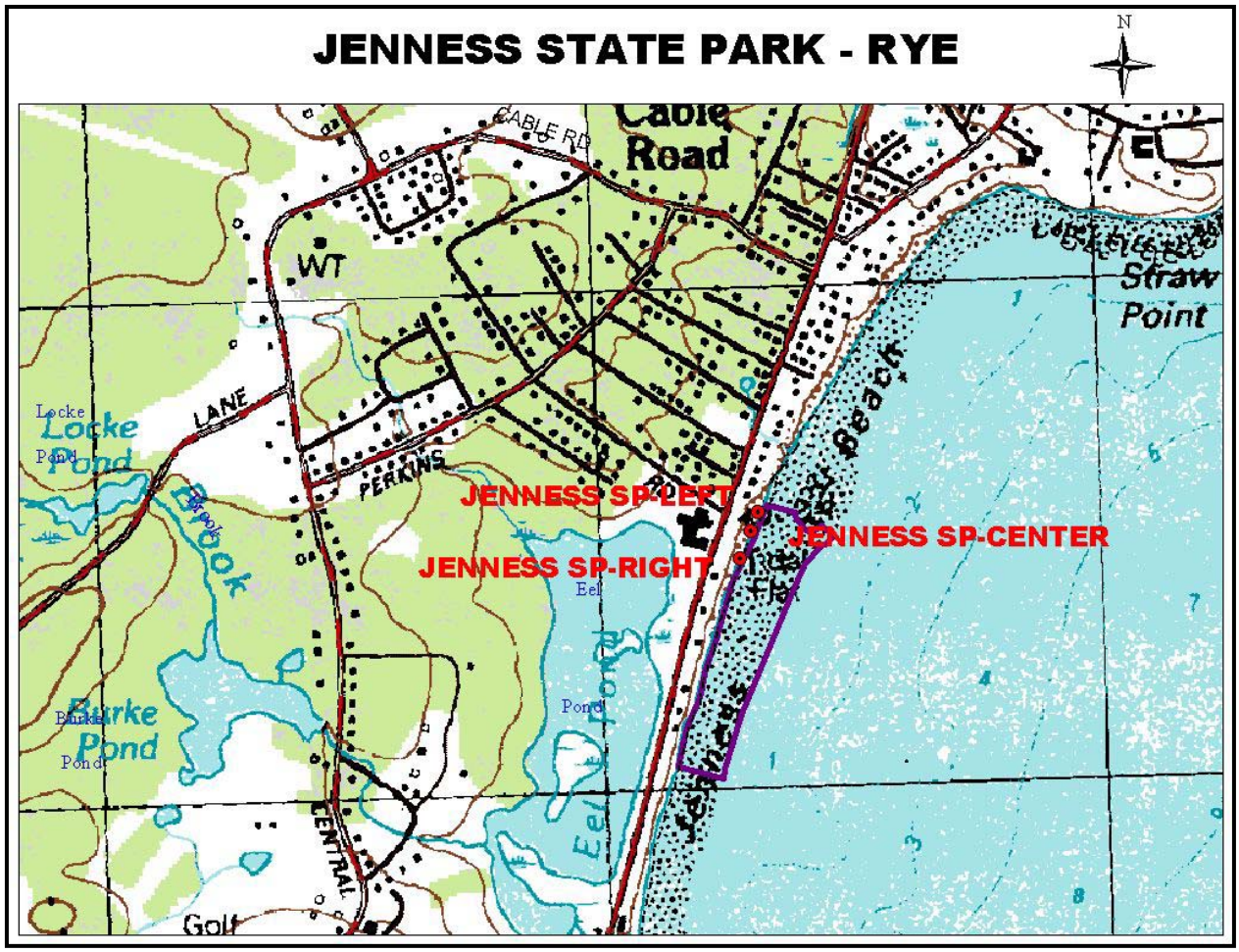

Figure 1. Map of Jenness Beach State Park

Tier Status and Sampling Frequency

The Beach Program developed a risk-based beach evaluation process and tiered monitoring approach and implemented this approach during the 2003 beach season. Beach evaluations are conducted annually to determine potential health threats to the public. Evaluations are based on several criteria in three main categories: beach history, microbial pathogen sources, and beach use. Based on these criteria, beaches are assigned either a Tier I or Tier II status. Tier I are high priority beaches that have an increased potential to affect public health while Tier II are low priority beaches that have less potential to affect public health. Beach sample frequency is based on the Tier statuses; Tier I beaches are sampled weekly and Tier II beaches are sampled every other week.

Jenness Beach was categorized as a Tier I beach based on the Beach Program's Risk-Based Evaluation ranking system. This ranking indicates that the beach is frequently used by the public and there are potential pollution sources present that may negatively affect public health. The Jenness Beach Tier I ranking has remained in place since the ranking system was implemented.

Water Quality

Beaches are monitored to ensure compliance with State Water Quality Standards. Marine waters are analyzed for the presence of the fecal bacteria Enterococci. Enterococci are known as indicator organisms, meaning their presence may indicate the presence of pathogenic bacteria. The state standard for Enterococci at public beaches is 104 counts/100 mL in one sample, or a geometric mean of 35 counts/100 mL in three samples collected over sixty days. Standard exceedances require the issuance and posting of a beach advisory. Beach advisories remain in effect until subsequent beach sampling indicates safe water quality conditions.

The number of samples collected at each beach is determined by the beach length. Beaches less than 100 feet in length are sampled at left and right locations 1/3 of the distance from either end of the beach. Beaches greater than 100 feet in length are bracketed into thirds and sampled at left, center and right locations. Routine sample collection may be enhanced by sampling known or suspected pollution sources to the beach area. Also, storm event sampling may be conducted at beaches where wet-weather events are expected to affect beach water quality.

The 2004 sampling season began June 1st. June was cooler and drier than normal, July was cooler and wetter than normal, while August was warmer and wetter than normal. The sampling season encompassed 108 days, of which precipitation was recorded on 42 days (based on Seabrook WWTF recorded precipitation). Twenty beach days (normal beach hours are considered 9:00 a.m. to 5:00 p.m.) were directly affected by precipitation.

Jenness Beach was sampled once per week from June 1st through Labor Day. Three samples were collected at left, center and right stations (Figure 1).There were a total of 15 routine inspections performed and 45 samples collected in 2004. One pre-season inspection was performed in 2004.

Table 1 includes the Enterococci data from each sampling event in 2004. Overall, the Enterococci levels were relatively low, with the exception of the June 8, 2004 samples. No advisories were issued for this beach in 2004. There is no indication as to the cause of the elevated Enterococci levels on June 8, 2004.

Table 1. Jenness Beach Enterococci Data 2004

Sample Date	Station Name	Results (counts per 100 mL)
05/11/2004	Jenness Beach – Left	<10
	Jenness Beach – Center	<5
	Jenness Beach – Right	<10
06/02/2004	Jenness Beach – Left	20
	Jenness Beach – Center	20
	Jenness Beach – Right	20
06/08/2004	Jenness Beach – Left	50
	Jenness Beach – Center	100
	Jenness Beach – Right	80
06/16/2004	Jenness Beach – Left	<10
	Jenness Beach – Center	<10
	Jenness Beach – Right	<10
06/22/2004	Jenness Beach – Left	10
	Jenness Beach – Center	<5
	Jenness Beach – Right	10
06/29/2004	Jenness Beach – Left	<10
	Jenness Beach – Center	<10
	Jenness Beach – Right	10
07/06/2004	Jenness Beach – Left	<10
	Jenness Beach – Center	<10
	Jenness Beach – Right	<10
07/12/2004	Jenness Beach – Left	<10
	Jenness Beach – Center	<10
	Jenness Beach – Right	<10
07/20/2004	Jenness Beach – Left	<10
	Jenness Beach – Center	<10
	Jenness Beach – Right	<10
07/27/2004	Jenness Beach – Left	<10
	Jenness Beach – Center	<10
	Jenness Beach – Right	<10
08/02/2004	Jenness Beach – Left	<10
	Jenness Beach – Center	10
	Jenness Beach – Right	5
08/10/2004	Jenness Beach – Left	<10
	Jenness Beach – Center	<5
	Jenness Beach – Right	<10
08/16/2004	Jenness Beach – Left	<10
	Jenness Beach – Center	<10
	Jenness Beach – Right	30
08/23/2004	Jenness Beach – Left	<10
	Jenness Beach – Center	<10
	Jenness Beach – Right	<10
08/31/2004	Jenness Beach – Left	<10
	Jenness Beach – Center	10
	Jenness Beach – Right	10

Figure 2 depicts the Enterococci data in relation to the state standard for coastal beaches.

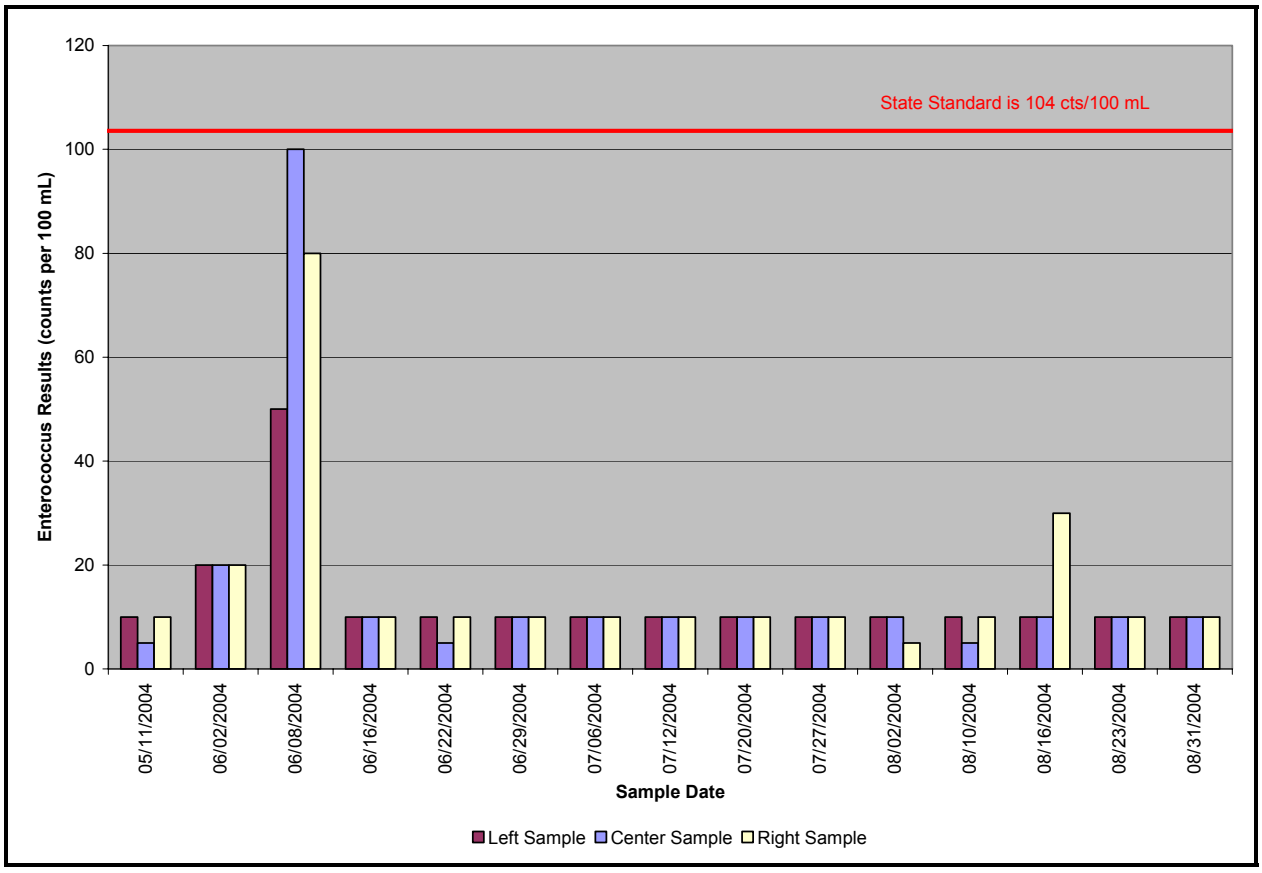

Figure 2. Jenness Beach Enterococci Data 2004

The Beach Program staff analyzed whether a relationship exists between elevated Enterococci levels and precipitation at Jenness Beach. Analyses of the data indicate no direct correlation. DES will continue to monitor precipitation data and Enterococci levels. Precipitation often causes elevated bacteria levels due to runoff in the watershed.

Areas of Concern

There are a few areas of minor concern at Jenness Beach. The surrounding area is residential and the beach is popular with residents and vacationers. The public is often observed walking dogs on Cable and Jenness Beaches. As long as they clean up their dogs' wastes, there should be no concern. Pet wastes create the potential to increase bacteria concentrations in the swimming area. Also, young children might touch the feces when playing in the sand causing a potential health risk. Dogs are not permitted on any of New Hampshire's state-owned beaches.

There were several occasions when beach inspection data noted that the sanitary facilities needed cleaning and at least one toilet was clogged. With a high volume of beach users, this can be expected. However, unsanitary conditions are undesirable for beach users.

Thoughts for the Future

- The State Parks Division, local businesses, or school groups should consider joining NHDES' Adopt-a-Beach Program. The program would consist of beach clean-ups and water quality monitoring. DES would conduct training sessions and participate in education and outreach activities for the community. If you are interested, please contact Sara Sumner at 603-271-8803 or ssumner@des.state.nh.us.

- The State Parks Division should consider providing extra trash receptacles and trash bags for the public to dispose of waste. The Beach Program has observed various amounts of trash at Jenness Beach. Trash receptacles may help reduce litter along the beach making the area more aesthetically pleasing to the public. It may also keep marine waterfowl off the beach reducing the amount of potential fecal contamination.

- DES recommends that the toilet facilities should be inspected and cleaned more often. Jenness Beach is a popular spot during the summer and the facilities are frequently used.